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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,318	03/28/2001	Ravi Prakash	CHA9 2001 0003US1	4786
23550	7590	10/06/2004	EXAMINER	
HOFFMAN WARNICK & D'ALESSANDRO, LLC			AMINI, JAVID A	
3 E-COMM SQUARE			ART UNIT	PAPER NUMBER
ALBANY, NY 12207			2672	12

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,318

Applicant(s)

PRAKASH ET AL.

Examiner

Javid A Amini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 24, 2004 has been entered.

Response to Arguments

Applicant's arguments with respect to claim 1-27 dated March 25, 2004 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-9, 16-22 and 24-27 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant discloses in claim 4 line 5, K_h and K_v are fractions that are functions of skew angle and data point location of the first image. And also Applicant discloses the same statement on page 9 lines 12-15. Applicant desires to provide explanation of How does a person skill in the art calculate the value of skew angle in order to find the value of K_h and K_v ? And also are K_h and K_v considered as coefficients for the skew angle and the data points?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Sung-II Chien (hereafter refers as a Chien), and further in view of Suchendra M. Bhandarkar (hereafter refers as a Suchendra).

1. Claims 1, 10.

Chien on page 488 under "*C. Discussions about Alternative Block Sizes*" teaches a computer and memory, and the step of preamble "A method of rotating a first image in an image buffer, the method comprising the steps of:" is obvious because each computer equipped with a graphic controllers and they designed with the image buffer or memory buffer. The step of "extracting first image data from the image buffer;" or initial image data from the image buffer is obvious because the images should be stored temporally or permanently in the memory or buffer areas. Chien in figs. 5, 6 and 9 illustrates the step of "creating a rotated image". Chien is silence about the step of "substantially free of aliasing error using weighted sums of data points of the first image". However, Suchendra on page 1017 under section 2.3 teaches the rotated image is free of distortions and artifacts (or aliasing), by eliminating the need for floating point multiplication. Chien on page 484 in equation 1 represents data point in the original and the destination images. The skew angle of the first image shown by θ . Therefore the following step is obvious, because a person skill in the art would have used the same terminology as the following step: "wherein

weighting depends on a skew angle of the first image and data point location in the first image.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Suchendra into Chien in order to modify the Chien's invention by eliminating the floating point multiplication method, which provide VLSI implementation of real-time image rotation. The same time Suchendra's invention could have implemented the algorithm uses coarse and fine blocks hierarchically organized and their PMPs.

2. Claim 2,

Chien on page 486 under "*C. Coarse Block Rotation*" teaches the step of "The method of claim 1, wherein the first image is of a document, and the first image data is created in the image buffer by the step of scanning the document".

3. Claim 3,

The method of claim 1, further comprising the step of storing the first image data in a database. The computer in the claim 1 can be considered as a database.

4. Claims 4-6,

The method of claim 1, wherein the step of creating the rotated image is provided by applying the following algorithm to the first image data:

$$V_o = K_h * K_v (V_1 + V_4 - V_2 - V_3) + K_h (V_3 - V_4) + 1Q_v (V_2 - V_4) + V_4$$
, wherein V_o is a data point of the rotated image; V_1 , V_2 , V_3 and V_4 are first image data points that each incorporate a portion of V_o ; and K_h and K_v are fractions that are functions of skew angle and data point location of the first image. Chien does not explicitly specify the above algorithm, however on page 484 equation 1 represent the original image data by (x, y) , and the rotated image data by (x', y') , the skew angle data shown by $(\cos\theta, \sin\theta, \dots)$. Chien on page 484 in fig. 5 illustrates

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the 30° rotation, that means the angle is equal 30° . Different values for θ could be chosen. For example: 30° , 45° , ... 360° . In another words 45° is equivalent of $1/8^{\text{th}}$ of 360° . The rotation can be implemented in $1/8^{\text{th}}$ increments. Applicant should specify the significant of the mentioned algorithms.

5. Claim 7.

See rejection of claim 4. For the step of "The method of claim 1, wherein the step of creating the rotated image is provided by applying the following algorithm to the first image data: wherein V_o is a data point of the rotated image; V_2 , V_3 and V_4 are data points of the first image that each incorporate a portion of V_o ; and K_k and K_v are fractions that are functions of skew angle and data point location of the first image.

6. Claim 8.

See rejection of claims 4-6. For the step of "The method of claim 7, wherein K_k and $1Q_v$ are implemented in $1/8^{\text{th}}$ increments".

7. Claim 9.

See rejection of claims 4-6. The method of claim 7, further comprising the step of providing K_h and K_v in at least one lookup table.

8. Claim 11.

The system of claim 10, wherein the data points of the initial image are in adjacent rows of the image buffer. Chien in fig. 3 illustrates the adjacent rows and columns.

9. Claim 12.

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The system of claim 11, wherein a pair of data points are used from each of the adjacent rows of the image buffer. The step is obvious because Chien in equation 1 illustrates the data points by $(x, y, x'$ and $y')$.

10. Claim 13.

The system of claim 10, further comprising an image generation module configured to create the initial image. Chien in fig. 4 illustrates the rotation of an image that is the same as an initial image.

11. Claim 14.

The system of claim 13, further comprising a scanner for supplying data to the image generation module. See rejection of claim 2.

12. Claim 15.

The system of claim 10, further comprising a database configured to store initial image data. See rejection of claim 3.

13. Claim 16.

See rejection of claim 4.

14. Claim 17.

See rejection of claim 5. The system of claim 16, wherein $K:$ and $\&$ are implemented in $1/8$ th increments.

15. Claim 18.

The system of claim 16, wherein K_h and K_v are provided in a lookup table. See rejection of claims 4-6.

16. Claim 19.

See rejection of claim 4.

17. Claims 20 and 21.

See rejection of claims 5 and 6.

18. Claim 22.

The step of "A workstation comprising the system for rotating an initial image stored in an image buffer of claim 10" is obvious because a person skill in the art could have installed the computer mentioned on page 488 in first col. lines 17-20 in Chien into the network with a server. Then the computer refers as the workstation. Otherwise the applicant should be willing to specify the significant of the term used as "a workstation".

19. Claims 23-27.

The content of claims 23-27 are similar to content of claims 1-9, therefore the rejection of claims 1-9 applies to claims 23-27.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A Amini whose telephone number is 703-605-4248. The examiner can normally be reached on 8-4pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Javid A Amini
Examiner
Art Unit 2672

Javid Amini


JEFFERY A. BRIER
PRIMARY EXAMINER